REMARKS

The present invention relates to an adhesive label comprising a circuit substrate, an entire data carrier element for a contactless data carrier system containing an IC chip on at least one surface of the circuit substrate, and an adhesive layer on the entire data carrier element; the adhesive layer can be applied to an article.

In the Office Action of August 15, 2006, the Examiner indicated entry of the Response filed July 3, 2006, and continued rejection of claims 1, 2, and 4 - 14 under 35 U.S.C. § 103(a) based on Tanimura et al in view of Applicant's alleged admission. Since the Examiner's remarks in the Office Action did not indicate any consideration of the Declaration under 37 C.F.R. § 1.132 by Masateru Yamakage that was executed on June 12, 2006, and submitted simultaneously together with the Response filed July 3, 2003, Applicant's attorney contacted the Examiner and provided an additional copy of the Declaration to the Examiner for the Examiner's proper consideration. After the Examiner's consideration and discussion with the undersigned attorney, the Examiner summarized his comments to the undersigned attorney in an Interview Summary issued on November 20, 2006, in which the Examiner indicated that the Declaration (1) merely compares the printability of different embodiments or arrangements of the claimed elements, but lacks arguments as to how the embodiments related to the combined teachings of the prior art; (2) the Examiner questioned how printability could be a superior function/property, because the Examiner envisioned that the label could be printed separately; and (3) the Examiner indicated that the claims did not contain recitation regarding printablity. In response to the Examiner's

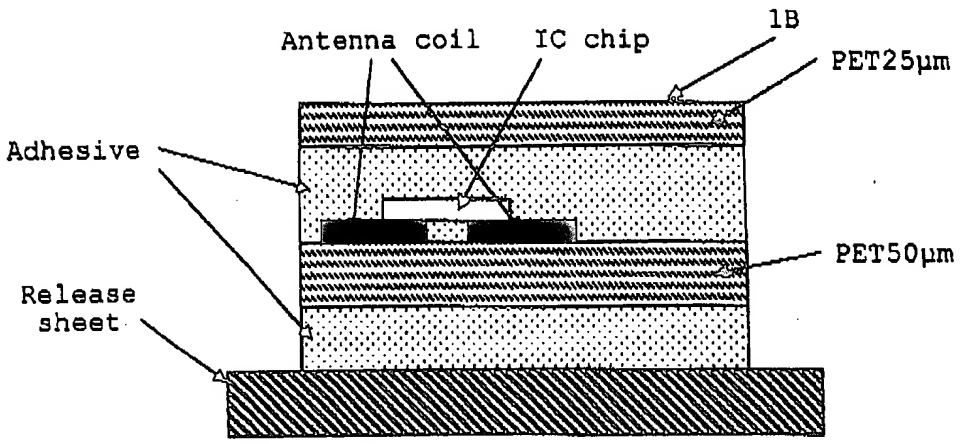
Interview Summary, a Statement Of Substance Of Interview is submitted simultaneously herewith, and the remarks below specifically address the issues raised by the Examiner with respect to Mr. Yamakage's Declaration Under 37 C.F.R. § 1.132. In the present Amendment, claims 1, 8, 10, and 12 have been amended to further explicitly indicate that the outermost label is printable, and said outermost surface does not contain the entire data element or a part of the data element. Thus, the printability characteristics are now indicated in all of the claims, having been recited in the all of the independent claims, and although printing is not required to utilize the adhesive labels in accordance with the present invention, the printability characteristics of the adhesive label of the present invention are very important from the commercial and practical view point. In this regard, the presently claimed invention differs from and is superior to the cited Tanimura reference upon which the prior art rejections are based.

Below, Applicants address in more detail the relationship of the testing reported in the Declaration Under 37 C.F.R. § 1.132 by Mr. Yamakage with respect to the closest prior art, and with respect to the importance of printability.

Relationship to the closest prior art

As shown in "Fig. B (Comparative Experiments A - C)" on page 4 of Mr. Yamakage's Declaration,

Fig. B (Comparative Experiments A-C)



the PET circuit substrate (thickness = 50 μm) of each of the three adhesive labels prepared in the Comparative Experiments A to C carries the contactless data carrier element on the surface opposite to the surface carrying the adhesive layer which comes in direct contact with a surface of an article when the adhesive label is applied to the article. That is, in the three adhesive labels prepared in the Comparative Experiments A to C, the contactless data carrier element is carried on the surface on the side of the outermost surface 1B for printing, with respect to the PET circuit substrate.

In a contactless data carrier element, a portion containing an IC chip is thicker than other portions, and thus, the contactless data carrier element has an irregular or uneven thickness structure. To obtain good printability in an adhesive label containing a contactless data carrier

element, an irregular or uneven structure on an outermost surface for printing must be minimized.

As shown in "Table 1" (reproduced below for the Examiner's convenience) on page 5 of Mr. Yamakage's Declaration, when the printability on the outermost surface 1B was evaluated in the Comparative Experiments A to C, the best printability was obtained in the Comparative Experiment C, wherein the acrylic pressure sensitive adhesive layer which covered the contactless data carrier element and was provided between the PET circuit substrate and the surface PET layer (thickness - 25 μm) for printing had the largest thickness. This is because the thickness between the PET circuit substrate and the surface PET layer must be increased to reduce any influence of irregular or uneven structure of the contactless data carrier element carried on the surface on the side of the outermost surface 1B for printing, with respect to the PET circuit substrate.

Table 1

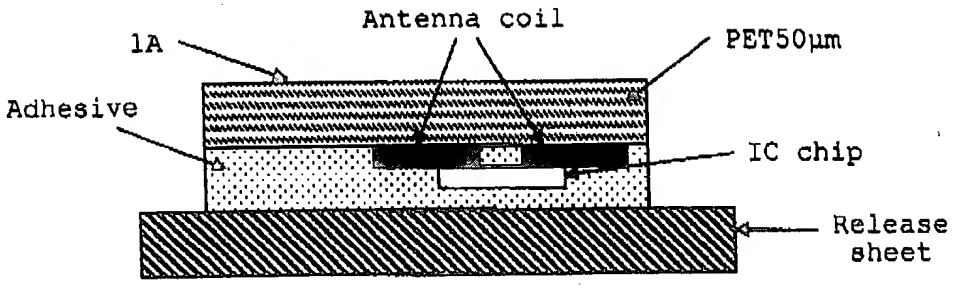
	Printability	Thickness [μm]		
		Adhesive layer containing element	Portion containing IC chip	Portion without IC chip
Experiment A	B	26	335	179
Comparative Experiment A	C	46	373	222
Comparative Experiment B	C	124	441	293
Comparative Experiment C	A	228	494	406

Mr. Yamakage's Declaration was presented to show that, when the contactless data carrier element is carried on the surface on the side of the outermost surface for printing with respect to the PET circuit substrate, as in the closest prior art (the Tanimura reference), it is necessary to increase the thickness between the circuit substrate and the surface layer, whereby any influence of irregular or uneven structure of the contactless data carrier element is reduced, and consequently the entire thickness of an adhesive label is increased.

As shown in Fig. 2 of the Tanimura reference (the closest prior art), the polyimide substrate 16 carries the IC chip 20 and the antenna wiring 30 on the surface opposite to the surface carrying the adhesive layer 17 which comes into direct contact with a surface of a cassette. That is, in the embodiment shown in Fig. 2 of the Tanimura reference, the contactless data carrier element is carried on the surface on the side of the outermost coated layer 12 for printing, with respect to the polyimide substrate 16. Therefore, it is apparent from the results shown in the Comparative Experiments A, B, and C of Mr. Yamakage's Declaration that the thickness between the polyimide substrate 16 and the coated layer 12 must be increased in the embodiment shown in Fig. 2 of the Tanimura reference, and consequently the entire thickness of the embodiment shown in Fig, 2 of the Tanimura reference is increased.

On the contrary, as shown in "Fig, A (Experiment A)" on page 3 of Mr. Yamakage's Declaration,

Fig. A (Experiment A)



the PET circuit substrate (thickness = 50 μm) of the adhesive label prepared in the Experiment A according to the present invention carries the contactless data carrier element on the surface carrying the adhesive layer which comes in direct contact with the surface of an article when the adhesive label is applied to the article. That is, in the adhesive label prepared in the Experiment A according to the present invention, the contactless data carrier element is carried on the surface opposite to the side of the outermost surface IA for printing, with respect to the PET circuit substrate.

As shown in "Table 1" (see above) of Mr. Yamakage's Declaration, printability sufficient from a practical standpoint can be obtained in the adhesive label prepared in the Experiment A wherein the entire thickness is thinnest.

Furthermore, the advantageous effects of the adhesive label according to the present invention are described in the present specification as follows:

> "As shown in Table 1, a good printing was obtained without an influence of an irregular or uneven structure due to the electronic components, in the adhesive labels prepared in Examples 1 to 3. In the adhesive label prepared in Comparative Example, however, a resulting printing was influenced by the irregular or uneven structure due to the electronic components, and a pin hole occurred," (see page 14, the first paragraph after specification "Table 1").
>
> "INDUSTRIAL APPLICABILITY
> The present invention can provide an adhesive label that is not influenced by an irregular or uneven structure formed by a contactless data carrier element, even though the present adhesive label is thinner than the conventional adhesive label-type contactless data carrier." (see page 14)

Based on the above, Applicants respectfully submit that Mr. Yamakage's Declaration clearly shows the unexpectedly remarkable effects obtainable by the present invention over the closest prior art, that is, the Tanimura reference.

Importance of printability

A commercially available contactless data carrier adhesive label is dispatched to logistical or FA users, usually in the form of a roll wherein a long sheet substrate carrying many adhesive labels thereon is wound around a core bar. Each adhesive label has a surface space sufficient for printing and an IC chip with a room sufficient for storing electronic data. When each adhesive label is released from the long sheet substrate and adhered to an article, identification data, such as a bar-code, a delivery date, or a delivery time, specific to each article

or group of articles is printed thereon, and at the same time necessary electronic data is recorded in the IC chip. As above, logistical or FA users can print and record any variable data on each adhesive label according to their needs.

If printing must be conducted before an adhesive label production is completed, as mentioned by the Examiner, the content of information to be printed must be determined in advance; that is, the application field or the usage flexibility of the adhesive label would be extremely limited.

Furthermore, there are disadvantages in the procedures for preparing the adhesive labels, if printing must be conducted before or during the production of an adhesive label.

For example, when an adhesive label as shown in Fig. 1 of the present specification is prepared on the condition that the outermost surface lb of the circuit substrate 1 has been printed, it would be very difficult to print the surface lb of the circuit substrate 1 after mounting the IC chip 2 on the antenna coil 21, but before the IC chip 2 and the antenna coil 21 are covered with an adhesive layer, because the surface lb would have an irregular or uneven structure. Therefore, the surface lb must be printed before forming an antenna coil 21 on the opposite surface of the circuit substrate 1. Alternatively, the surface lb must be printed after forming an antenna coil 21, but before mounting an IC chip 2 on the antenna coil 21.

Where the surface lb is printed before forming an antenna coil, the positions to be printed on the surface lb must be accurately adjusted, and the positions on which the antenna coil is formed also must be accurately adjusted, taking into account, for example, the size of an individual adhesive label to be divided.

Where the surface lb is printed after forming an antenna coil, but before mounting an IC chip on the antenna coil, the positions to be printed on the surface lb must be accurately adjusted, taking into account, for example, a size of an individual adhesive label to be divided.

Further, when the adhesive label as shown in Fig. 2 attached to the present specification is prepared, the outermost surface 4b of the surface layer 4 must be printed before application to the circuit substrate 1. This means that the surface layer 4 must be applied to the circuit substrate 1 before or after the surface layer 4 is divided into individual pieces corresponding to individual adhesive labels.

Where the surface 4b is applied to the circuit substrate 1 before being divided into individual pieces, the printing must be accurately adjusted, and the position to which the surface layer 4 is applied must be accurately adjusted, taking into account, for example, the positions on which the antenna coil is formed, and the size of an individual adhesive label to be divided.

Where the surface 4b is applied to the circuit substrate 1 after being divided into individual pieces, the position to which the divided pieces of the surface layer 4 are applied must be accurately adjusted. Further, if the size of the divided pieces of the surface layer 4 is the same as that of the individual adhesive label, it is very difficult to accurately overlap one with the other. If the size of the divided pieces of the surface layer 4 is different from that of the individual adhesive label, uneven steps are generated on a releasing substrate, and thus, the individual adhesive labels are easily released from the releasing substrate.

As above, printability is very important for a commercially available contactless data carrier adhesive label.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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